Installing and Using the Linux-Kernel Memory Model (LKMM)
LKMM Components

tools/memory-model
linux-kernel.*
“source code”

interpreted by
herd7

input to
Litmus tests

Part of
Linux-kernel
source tree

Runs on
ocaml
LKMM Components

- tools/memory-model
- linux-kernel.*
- “source code”

Interpreted by

- herd7
- (second)

Input to

- Litmus tests
- (fourth)

Runs on

- ocaml
- (first)

Part of

- Linux-kernel source tree
- (third)

Distro installation

https://github.com/herd/herdtools7

https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git
LKMM Installation

- Install ocaml from distro: https://ocaml.org/install
- Install herd7: https://github.com/herd/herdtools7
  - Follow instructions in INSTALL.md
  - May need opam:
- Get prerequisites: opam install dune menhir
- Find Linux-kernel source tree:
  - git://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git
- (Optional) Install litmus tests:
  - https://github.com/paulmckrcu/litmus
  - Alternatively, Linux-kernel tools/memory-model/litmus-tests
Run LKMM

- cd $LINUX_SRC/tools/memory-model
- herd7 -conf linux-kernel.cfg <path>
  - Where <path> is litmus-test pathname
Questions?